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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/892,836	07/15/1997	MARCUS R. SKEEM	F-3278	7305

7590 05/20/2003
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EXAMINER

NGUYEN, GEORGE BINH MINH

ART UNIT	PAPER NUMBER
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3723

DATE MAILED: 05/20/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

08/892,836

Applicant(s)

SKEEM ET AL

Examiner

George Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 2 and 27 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 28, 29 and 34 is/are allowed.
- 6) ☐ Claim(s) 1, 5-9, 11-26 and 30-33 is/are rejected.
- 7) ☒ Claim(s) 3-4, 10 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Receipt is acknowledged of Applicant's request for rehearing regarding to the Board's decision mailed September 20, 2003.

Receipt is acknowledged of the Board's response, filed on March 17, 2003, to the rehearing request. The Board denied to making any changes regarding to the Board's decision filed on September 20, 2003.

In light of the Board's decision filed September 20, 2003, the examiner agrees to reopen prosecution. Therefore, this action is not final.

Claims 2 and 27 are withdrawn from further consideration due to a restriction.

Claims 1, 3-26, and 28-34 are presented for examination.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 5-9, 11-26, and 30-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asada'5,018,276 in view of Lowder et al.'3,894,673.

With reference to Figures 7-9, Asada discloses an abrasive cutting tool comprising: a) a monolithic substrate (5) having a substrate surface with plurality of teeth (7) extending therefrom, each tooth having a contoured surface; b) a layer comprising superabrasive

grains (8) such as diamond, the layer being electroplated to at least a portion of the surface of each tooth to define a plurality of cutting levels parallel to the substrate surface, and each cutting level on each tooth being oriented such that a portion of each cutting level overlaps at least a portion of each other cutting level of the tooth; and c) an initial uppermost cutting level and successive uppermost cutting levels among the plurality of cutting levels of each tooth, whereby after the initial uppermost cutting level has been worn away by cutting the workpiece, each successive uppermost cutting level of the tooth presents to the workpiece a ring of superabrasive grain around the contoured surface of the tooth, and substantially all superabrasive grain within the ring simultaneously engages in cutting. But Asada does not disclose the abrasive layer being chemically bonded to at least a portion of the surface of each tooth.

With reference to Fig. 1, column 2, line 47 bridging to column 6, line 59, Lowder discloses an improved diamond abrasive tool and method of manufacture characterized by a direct brazing technique of diamond crystals to a substrate surface which requires no pre-conditioning of the surface of the diamond in order to obtain the necessary wetting thereof. The method employed utilizes readily available, very hard and durable brazing alloys which have been discovered to readily wet the diamond surface to obtain a final product wherein the minimum depth of the alloy bond tends to occur intermediate adjacent diamond crystals with outstanding retention of the crystals and greatly extended tool life. In column 5, lines 27-35, Lowder further discloses that the application of the described invention to the manufacture of diamond abrasive tools encompasses a

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great variety of sizes, shapes, and types of tools from extremely thin abrasive discs to larger diameter grinding wheels and saw blades.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the abrasive tool of Asada with the brazing method of Lowder et al.'673, in order to wet the diamond surface to chemically bond the diamond to the tooth substrate to provide a very strong securement of the diamond to the tooth surface to chemically bond the diamond to the tooth substrate to provide a very strong securement of the diamond to the tooth.

In regard to claims 5-9, 12, 15-26, and 31-32, it would have been obvious matter of design choice to select the grain concentration and hardness index for the tooth depending on the material to be cut. Such engineering specification is well within the skill of the artisan.

In regard to claim 33, it would have been obvious matter design choice to apply the cutting element to core drills or abrasive sheets depending on the intended use.

Allowable Subject Matter

3. Claims 28-29 and 34 are allowed.
4. Claims 3, 4, and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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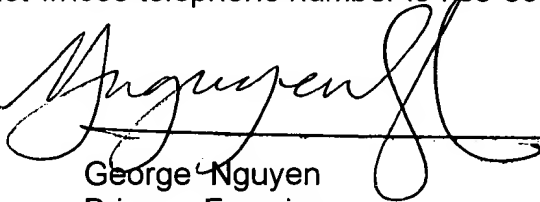
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Nguyen whose telephone number is 703-308-0163. The examiner can normally be reached on Monday-Friday/630AM-300PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail can be reached on 703-308-2687. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3579 for regular communications and 703-305-3579 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1078.

George Nguyen
Primary Examiner


George Nguyen
Primary Examiner
Art Unit 3723

GN
May 15, 2003